

Reasoning and Problem Solving

Step 5: Written Methods

National Curriculum Objectives:

Mathematics Year 4: (4C7) [Multiply two-digit and three-digit numbers by a one-digit number using formal written layout](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Work out the number used in the multiplications to establish if the statement is true or false. Using 2-digit numbers to 20.

Expected Work out the number used in the multiplications to establish if the statement is true or false. Using 2-digit numbers to 99.

Greater Depth Work out the number used in the multiplications to establish if the statement is true or false. Multiplying 2-digit numbers to 99 by two 1-digit numbers.

Questions 2, 5 and 8 (Reasoning)

Developing Explain which is the odd one out by comparing the calculations and representations. Multiplying 2-digit numbers to 20 by 1-digit numbers.

Expected Explain which is the odd one out by comparing the calculations and representations. Multiplying 2-digit numbers to 99 by 1-digit numbers.

Greater Depth Explain which is the odd one out by comparing the calculations and representations. Multiplying 2-digit numbers to 99 by two 1-digit numbers.

Questions 3, 6 and 9 (Reasoning)

Developing Explain whether the multiplication has been calculated correctly. Using 2-digit numbers to 20.

Expected Explain whether the multiplication has been calculated correctly. Using 2-digit numbers to 99.

Greater Depth Explain whether the multiplication has been calculated correctly. Multiplying 2-digit numbers to 99 by two 1-digit numbers.

More [Year 4 Multiplication and Division](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Written Methods

1a. True or false? All these calculations have been correctly multiplied by 6.

$$14 \times \square = 84$$

$$17 \times \square = 102$$

$$12 \times \square = 74$$



PS

Written Methods

1b. True or false? All these calculations have been correctly multiplied by 5.

$$15 \times \square = 75$$

$$18 \times \square = 90$$

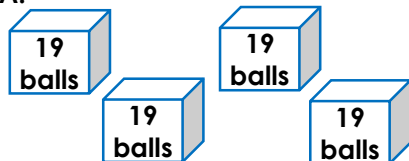
$$13 \times \square = 75$$



PS

2a. Which is the odd one out?

A.



B.

$$\begin{array}{r} 1 \quad 9 \\ \times \quad 4 \\ \hline 3 \quad 6 \\ 4 \quad 0 \end{array}$$

C.

10	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1

Explain your answer.



R

2b. Which is the odd one out?

A.

10	1	1	1	1	1	1
10	1	1	1	1	1	1
10	1	1	1	1	1	1

B.

$$\begin{array}{r} 1 \quad 6 \\ \times \quad 3 \\ \hline 1 \quad 8 \\ 3 \quad 0 \end{array}$$

C.



Explain your answer.



R

3a. Sydney is solving 16×7 .



$$\begin{array}{r} 1 \quad 6 \\ \times \quad 7 \\ \hline 4 \quad 4 \\ 7 \quad 0 \\ \hline 1 \quad 1 \quad 4 \end{array}$$

Is she correct? Convince me!



R

3b. Asher is solving 17×9 .



$$\begin{array}{r} 1 \quad 7 \\ \times \quad 9 \\ \hline 6 \quad 3 \\ 9 \\ \hline 7 \quad 2 \end{array}$$

Is he correct? Convince me!



R

Written Methods

4a. True or false? All these calculations have been correctly multiplied by 7.

$$26 \times \square = 182$$

$$18 \times \square = 126$$

$$35 \times \square = 245$$



PS

Written Methods

4b. True or false? All these calculations have been correctly multiplied by 6.

$$36 \times \square = 216$$

$$42 \times \square = 252$$

$$27 \times \square = 168$$



PS

5a. Which is the odd one out?

A.



B.

$$\begin{array}{r} 42 \\ \times 6 \\ \hline 12 \\ 240 \\ \hline \end{array}$$

C.

10	10	10	10	1	1
10	10	10	10	1	1
10	10	10	10	1	1
10	10	10	10	1	1
10	10	10	10	1	1

Explain your answer.



R

5b. Which is the odd one out?

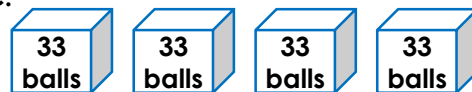
A.

10	10	10	1	1	1	1
10	10	10	1	1	1	1
10	10	10	1	1	1	1
10	10	10	1	1	1	1

B.

$$\begin{array}{r} 34 \\ \times 4 \\ \hline 16 \\ 120 \\ \hline \end{array}$$

C.



Explain your answer.



R

6a. Julie is solving 42×6 .



$$\begin{array}{r} 42 \\ \times 6 \\ \hline 12 \\ 24 \\ \hline 36 \end{array}$$

Is she correct? Convince me!



R

6b. Martin is solving 37×7 .



$$\begin{array}{r} 37 \\ \times 7 \\ \hline 49 \\ 210 \\ \hline 259 \end{array}$$

Is he correct? Convince me!



R

Written Methods

7a. True or false? All these calculations have been correctly multiplied by 4 and by 2.

$$59 \times \square \times \square = 472$$

$$92 \times \square \times \square = 736$$

$$74 \times \square \times \square = 596$$



PS

Written Methods

7b. True or false? All these calculations have been correctly multiplied by 2 and by 3.

$$86 \times \square \times \square = 516$$

$$67 \times \square \times \square = 402$$

$$94 \times \square \times \square = 564$$

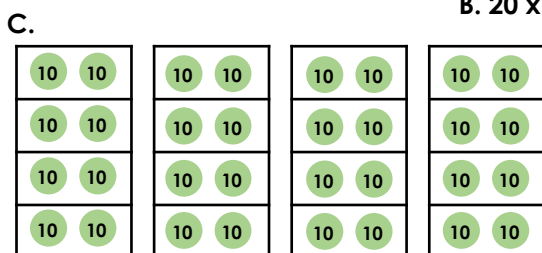


PS

8a. Which is the odd one out?



B. $20 \times 4 \times 5 = ?$

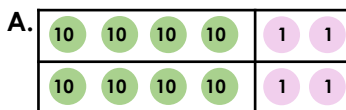


Explain your answer.



R

8b. Which is the odd one out?



B. $41 \times 2 \times 2 = ?$



Explain your answer.



R

9a. Hillary is solving $23 \times 3 \times 9$.



$$\begin{array}{r} 23 \\ \times 3 \\ \hline 69 \\ \times 9 \\ \hline 207 \\ \hline \end{array}$$

Is she correct? Convince me!



R

9b. Seth is solving $15 \times 4 \times 3$.



$$\begin{array}{r} 15 \\ \times 4 \\ \hline 60 \\ \times 3 \\ \hline 180 \\ \hline \end{array}$$

Is he correct? Convince me!



R

Reasoning and Problem Solving

Written Methods

Developing

- 1a. False, $12 \times 6 = 72$
- 2a. C. A & B show 19×4 and C shows 18×4 .
- 3a. Sydney is incorrect. $6 \times 7 = 42$, not 44 as Sydney has recorded.

Expected

- 4a. True
- 5a. B. A & C show 42×5 and B shows 42×6 .
- 6a. Julie is incorrect. When multiplying $40 \times 6 = 240$ she has forgotten to record the zero in the ones column.

Greater Depth

- 7a. False, $74 \times 4 \times 2 = 592$
- 8a. B. A & C show $20 \times 4 \times 4$ and B shows $20 \times 4 \times 5$.
- 9a. Hillary is incorrect. She has not included the exchange in the second calculation when adding 80 and 40.

Reasoning and Problem Solving

Written Methods

Developing

- 1b. False, $13 \times 5 = 65$
- 2b. C. A & B show 16×3 and C shows 16×4 .
- 3b. Asher is incorrect. He has multiplied 1×9 instead of 10×9 .

Expected

- 4b. False, $27 \times 6 = 162$
- 5b. C. A & B show 34×4 and C shows 33×4 .
- 6b. Yes Martin is correct. $7 \times 7 = 49$, $30 \times 7 = 210$ and $49 + 210 = 259$.

Greater Depth

- 7b. True
- 8b. B. A & C show $42 \times 2 \times 2$ and C shows $41 \times 2 \times 2$.
- 9b. Seth is incorrect. In the first calculation, he has multiplied 1 by 4 instead of 10 by 4. This means his second calculation is incorrect also.